REMARKS

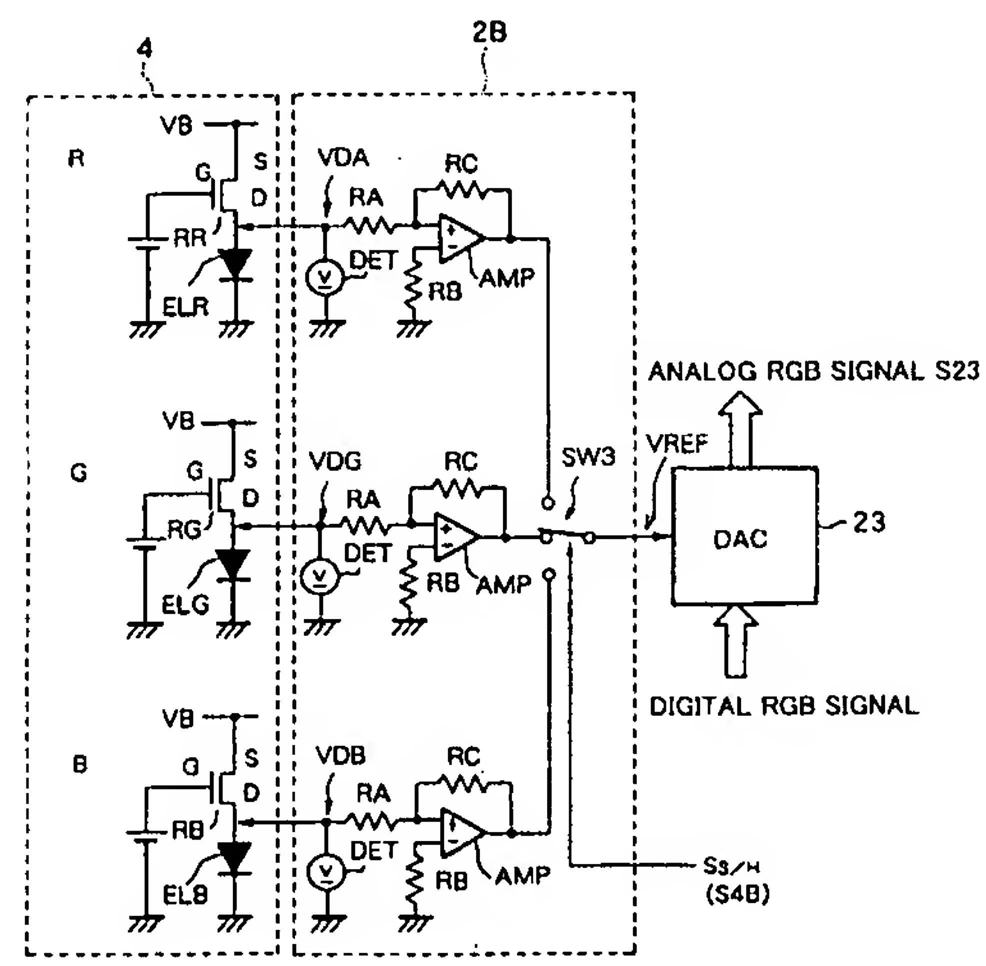
This request for reconsideration is responsive to the Final Office Action dated February 20, 2009. Claims 1, 10, 13, and 19 are independent claims. Reconsideration and allowance is requested in view of the following remarks.

An Example Embodiment

An example embodiment of the present invention is directed to a display device, containing organic EL elements, that compensates for the deterioration of the EL elements over time. As current flows through the organic EL elements, the organic EL elements deteriorate due to heat and the general decline in the organic materials. The example embodiment includes an adjustment information retrieval means 4 for obtaining information regarding the necessary lighting adjustments, which are provided to the level adjustment circuit 2B.

In the embodiment disclosed in Fig. 12, the adjustment information retrieval means 4 contains a series of pixels from each pixel type, in this case RGB pixels. These pixels are driven alongside the pixels of the display device; as such, they deteriorate at the same rate as the pixels of the display device. The Level Adjustment Circuit 2B monitors the deterioration of the pixels in the adjustment information retrieval means 4 by measuring the voltage difference between the two ends of the pixel elements (ELR, ELG, ELB). Based on the identified voltage difference, the Level Adjustment Circuit 2B determines the necessary adjustment to make to the corresponding colored pixels in the display. All these adjustments may be done before the signal is separated into its constituent RGB values for display.

FIG. 12



2B: LEVEL ADJUSTMENT CIRCUIT
4: ADJUSTMENT INFORMATION RETRIEVE MEANS
23: D/A CONVERTER

Rejections under 35 U.S.C. § 102/103

Claims 1, 3-7, 9, 13, 15, 16, and 18 have been rejected under 35 U.S.C. § 103 as obvious over U.S. Patent No. 6,765,551 to Nakano et al. ("Nakano") in view of U.S. Patent No. 7,042,427 to Inukai ("Inukai").

> Claim 1 recites: *an image display device, comprising:*
> *a circuit for generating drive signals from an input image signal ;*
> *a plurality of pixels including a light emitting element for emitting light of a predetermined color of red , green or blue by being applied with said drive signal supplied for each color from said circuit ;*
> *an adjustment information retrieve means for obtaining information relating to light emission adjustment proportional to the deterioration of said light emitting element;*
> *a level adjustment circuit provided in said circuit , for changing a level of an RGB signal before dividing said drive signals to respective RGB colors based on said information obtained by said adjustment information retrieve means; and wherein*
> *said level adjustment circuit changes a level of a direct current voltage supplied to said circuit, proportionally to account for the deterioration of a luminance of said light emitting element.*

With respect to claim 1, neither Nakano nor Inukai, either alone or in combination, teach or suggest "*a level adjustment circuit provided in said circuit , for changing a level of an RGB signal* ***before dividing said drive signals to respective RGB colors*** *based on said information obtained by said adjustment information retrieve means.*"

Nakano discloses a column electrode driving circuit including a reference voltage generation circuit that adjusts the chromaticity of the display signal ***after dividing the drive signals to their respective RGB colors. The display applies one of*** 64 grayscale levels of luminance to each separated RGB color signal.

FIG. 3

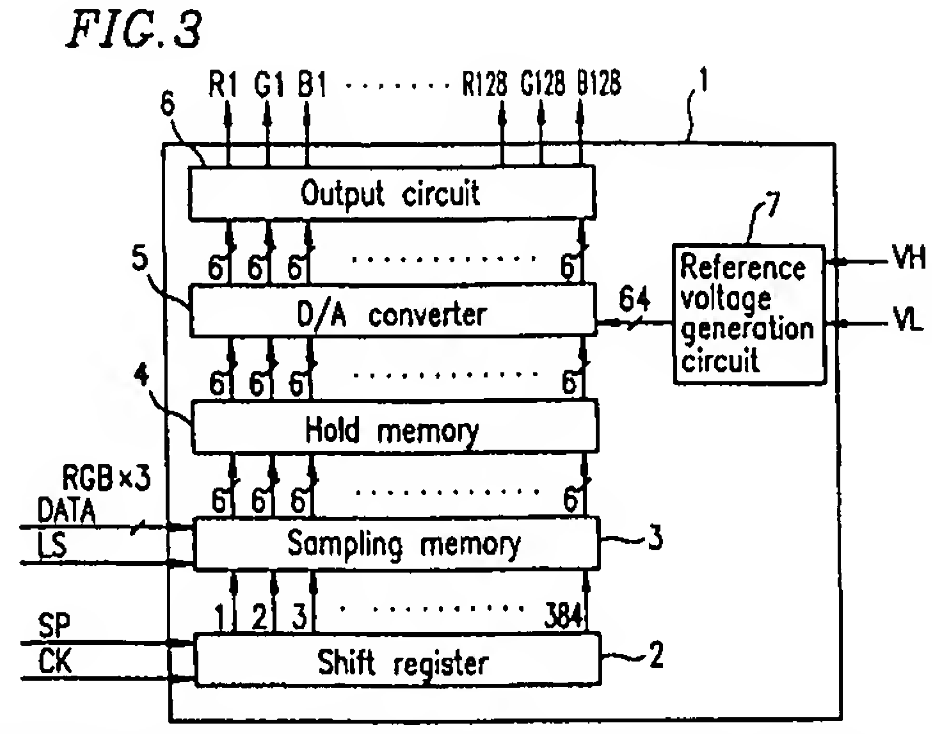


Fig. 3 of Nakano illustrates the mechanism by which RGB values are adjusted. Sampling memory 3 receives data that is divided into separate values, which pass to hold memory 4, then D/A

converter 5. D/A converter 5 uses the reference voltages for each of the different colored pixels to adjust the chromaticity of the different pixel RGB values. However, this adjustment is clearly being done after the signal is divided into its constituent RGB values.

Fig. 1 of Nakano illustrates an example whereby Nakano replaces elements 4-6 of Fig. 3 with a more complex color adjustment mechanism having 64+3 individual color adjustment line values. Nakano explains that the color adjustment line values provide values that correspond to Red, Blue, and Green color adjustments (col. 6, l. 64 – col. 7, l. 11).

The Office Action rejects the cited portion of claim 1 by citing to element 70 of Nakano and columns 6 and 8. The cited portion of column 6 recites:

> The output circuit 60 subjects the analog signals ***which have been converted*** by the D/A converter 50 to impedance conversion, and outputs the resultant analog signals as 40 ***driving voltages to the data lines*** coupled to the respective output nodes.

As such, the cited portion of claim 6 runs counter to the Office Action interpretation, as it clearly recites adjustments being made to the signal after the signal has been divided into its respective components.

Furthermore, the elements of Fig. 1, such as elements 40-70 replace elements 4-7 in Fig.3. However, they maintain the same form of input and output. These components operate and receive the RGB data as 384 values, with 128 inputs designated for each color (Col. 1, ll. 42-50). Since the wholesale replacement of the elements does not change their respective inputs, it becomes further evident that elements 40-70 **operate on divided drive signals**.

Inukia does not cure the deficiencies of Nakano. Inukai discloses a mechanism for measuring luminance decay, but fails to provide a mechanism "for *changing a level of an RGB signal* ***before dividing said drive signals to respective RGB colors*** *based on said information obtained by said adjustment information retriev[al] means.*"

Even assuming, arguendo, that Nakano and Inukia were combinable, Applicant submits that none of the cited references either alone or in any proper combination, cure the deficiencies of Nakano with respect to at least the previously identified features of claim 1. For similar reasons, Nakano and Inukia do not teach or suggest the features of claim 13. Claims 3-7, 9, 15, 16 and 18 depend on claims 1 and 13, and, therefore, are also overcome Nakano

Accordingly, Applicant respectfully requests that the rejection of claim 17 under 35 U.S.C. § 103(a) over Tanada be withdrawn.

As such, Nakano cannot form the basis for a rejection under 35 U.S.C. §103 for claim 1. For similar reasons, Nakano cannot form the basis for a rejection under 35 U.S.C. §102 for claim 13. Claims 3-7, 9, 15, 16, and 18 depend on claims 1 and 13, and therefore are also overcome Nakano and Inukia.

<u>*Rejections under 35 U.S.C. § 103*</u>

Claims 10-12 and 19-22 are rejected under 35 U.S.C. § 103 over Nakano in view of U.S. Patent No. 6,982,686 to Miyachi et al. ("Miyachi"); Claim 17 is rejected under 35 U.S.C. § 103 over Nakano and Inukia in view of U.S. Patent No. 6,774,578 to Tanada et al. ("Tanada").

Claims 10 recites: *An image display device, comprising:*

> *a circuit for generating drive signals from an input image signal; and*
>
> *a plurality of pixels including a light emitting element for emitting light of a predetermined color of red, green or blue by being applied with said drive signal supplied for each color from said circuit;*
>
> *wherein said circuit comprises*
>
> *a motion detection circuit for detecting motions by said image signal;*
>
> *a level adjustment circuit for changing a level of an RGB signal before the RGB signal is divided to said drive signals for the respective RGB colors based on a result of the motion detection obtained from said motion detection circuit; and*

a duty ratio adjustment circuit for changing the duty ratio of a light emission time of said pixels based on the motion detection result;

and wherein the plurality of pixels each comprise a light emission control circuit whereby once the pixel receives a drive signal, the light emitting element continues to draw on a voltage source so long as the light emission control circuit receives a signal from the duty ratio adjustment circuit.

For the same reasons set forth above with respect to claim 1, neither Nakano nor Inukai, either alone or in combination, teach or suggest "*a level adjustment circuit for changing a level of an RGB signal before divided to said drive signals for the respective RGB colors based on a result of the motion detection obtained from said motion detection circuit*," as recited in independent claim 10.

Miyachi discloses a method and apparatus for managing the light intensity of cold-cathode tubes in LCD monitors. Particularly, the cited elements of Miyachi are directed to a system for managing the illumination produced by cold-cathode tubes based on the motion present in a video signal. In Fig. 42, a video signal is input to liquid crystal panel control circuit 804. Control circuit 804 produces three output signals, two output signals for controlling the liquid crystal panel 805, and one output signal for controlling inverter control circuit 801. Inverter control circuit 801 controls cold-cathode tube 803, via Inverter 802. No signal is passed to the liquid display panel 805 for controlling the cold-cathode tube. Instead, an external circuit, i.e. inverter circuit 801, dims the cold-cathode tube.

Tanada discloses a device for detecting and accounting for EL degradation by detecting the variance in luminance on a pixel-by-pixel basis. Tanada employs photoelectric elements 106 which are each positioned on a separate pixel 107 of the display device. This allows each photoelectric element 106 to monitor a given pixel 107, which in turn allows the system to properly adjust the intensity of the pixels. Each photoelectric

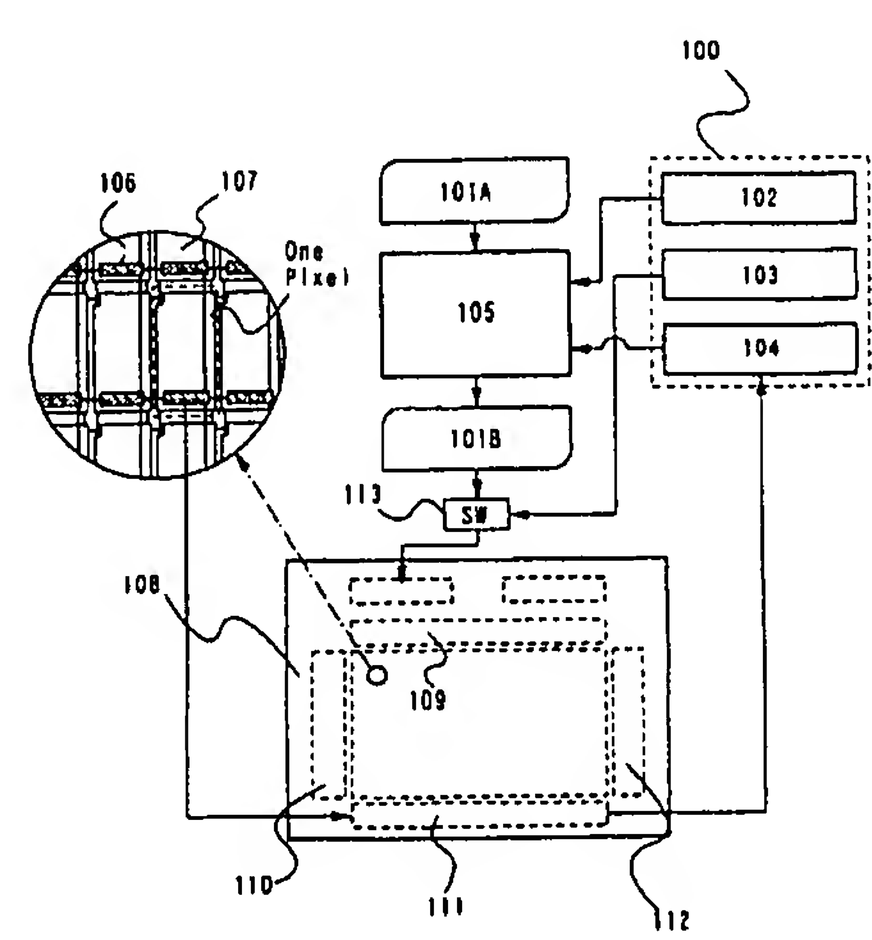


Fig. 1

element 106 monitors the actual light output of the pixels. The system operates by making corrections based on a test pattern provided in unit 103. Memory circuit 104 stores the brightness results, and the data brightness correction is stored in correction data storage portion 102. In the background, Tanada also discusses how previous attempts to account for pixel deterioration included using a timer to track how long the display device was in use, and thereby predict the expected pixel deterioration based on experimental results.

Neither Miyachi nor Tanaka teach or suggest "*a level adjustment circuit for changing a level of an RGB signal before divided to said drive signals for the respective RGB colors based on a result of the motion detection obtained from said motion detection circuit*,"as recited in independent claim 10; nor do Miyachi nor Tanaka provide a basis to modify Nakano nor Inukai to include this feature.

Even if Nakano, Inukai, Miyachi and Tanaka were combinable (which applicant does not admit), the combination still fails to render independent claim 10 obvious. Neither reference provides the motivation to teach or suggest the features of claim 10. For similar reasons, independent claim 19 is neither disclosed, suggested, nor rendered obvious by Nakano and Miyachi (although claims 10 and 19 should be interpreted solely based upon the limitations set forth therein).

Furthermore, at least for the reason disclosed above, claims 11, 12, and 20-22 overcome the combination of Nakano and Miyachi because they depend on independent claims 10 and 19.

CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. SON-2839 from which the undersigned is authorized to draw.

Dated: April 8, 2009

Respectfully submitted,

By 40,290

Ronald P. Kananen
Registration No.: 24,104
Christopher M. Tobin
Registration No.: 40,290
RADER, FISHMAN & GRAUER PLLC
Correspondence Customer Number: 23353
Attorneys for Applicant